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(56) Documents Cited

GB 1286252 A

GB 1204161 A

(58) Field of Search

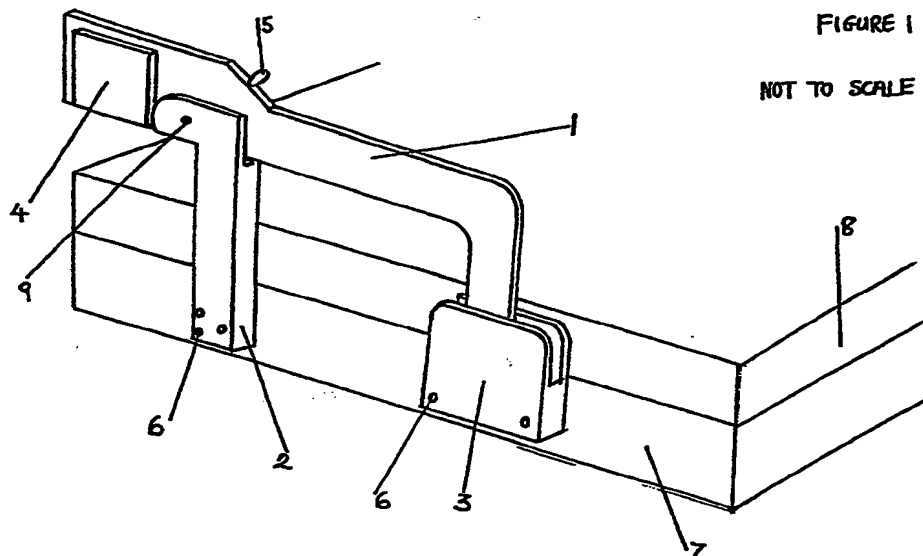
UK CL (Edition M) A4L LBES

INT CL⁵ A47C 21/08 , A47D 7/00 7/01 7/02

ONLINE DATABASE: WPI

(54) Pivoting safety rail for beds

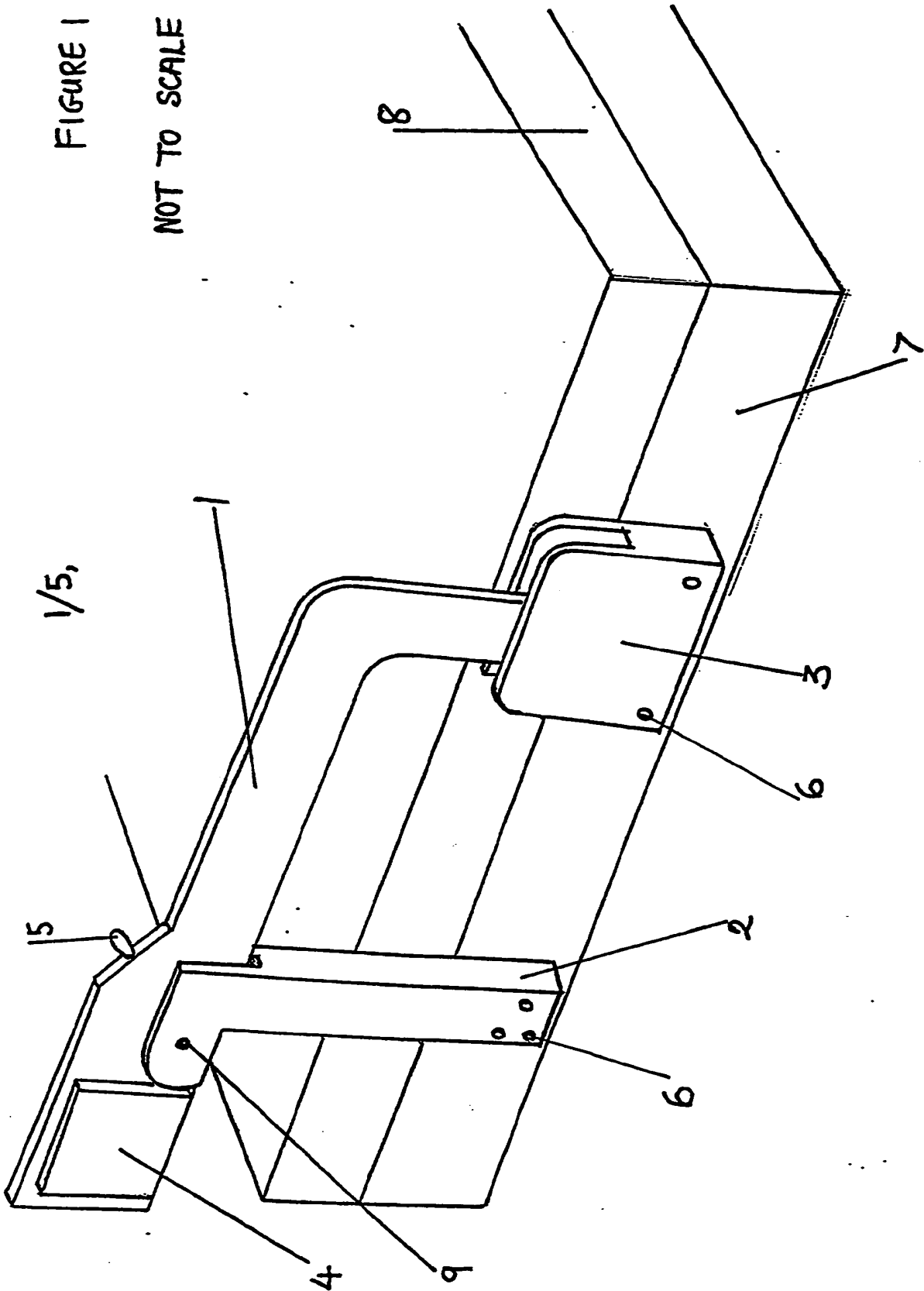
(57) A pivoting counterbalanced safety rail assembly, for fitting to the side(s) of a bed, reducing the risk of a person accidentally falling from bed. The rail 1. is counterbalanced towards the bed head and is supported to allow it to pivot by an offset pivot point on the clevis 9 of an upright pillar 2. A small knob 5. fitted to the top of the rail moves the rail up and down. With the knob near to the pivot point 9. and the rail counterbalanced, little effort, strength and movement are required to operate the rail through full travel, from a vertically stowed to a horizontal operating position. When in the operating position the bottom of the rail automatically slots into a keep 3. which restricts sideways movement. The rail is positively weighted to remain steady in the vertical and horizontal positions.



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FIGURE 1

NOT TO SCALE



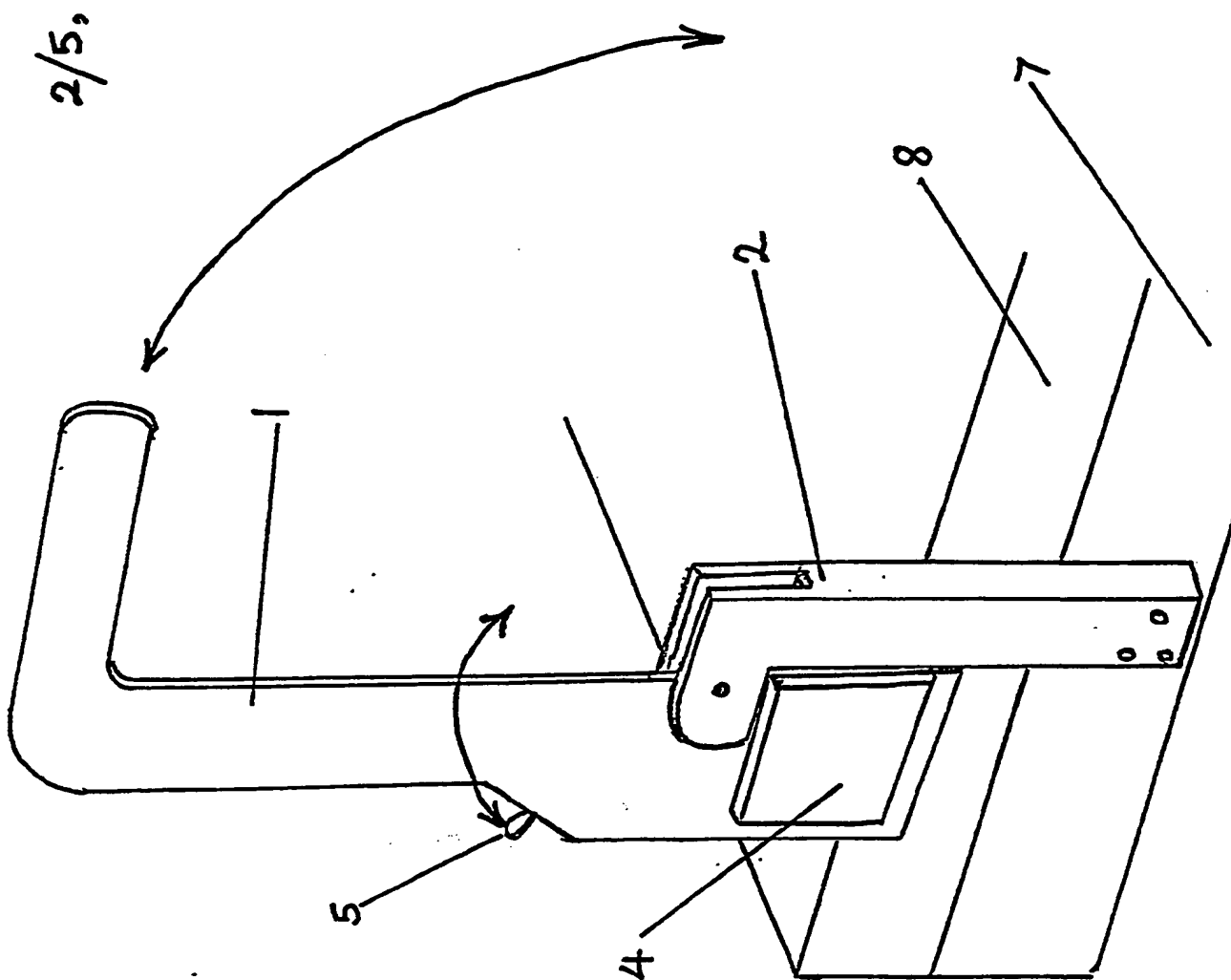


FIGURE 2
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FIGURE 3
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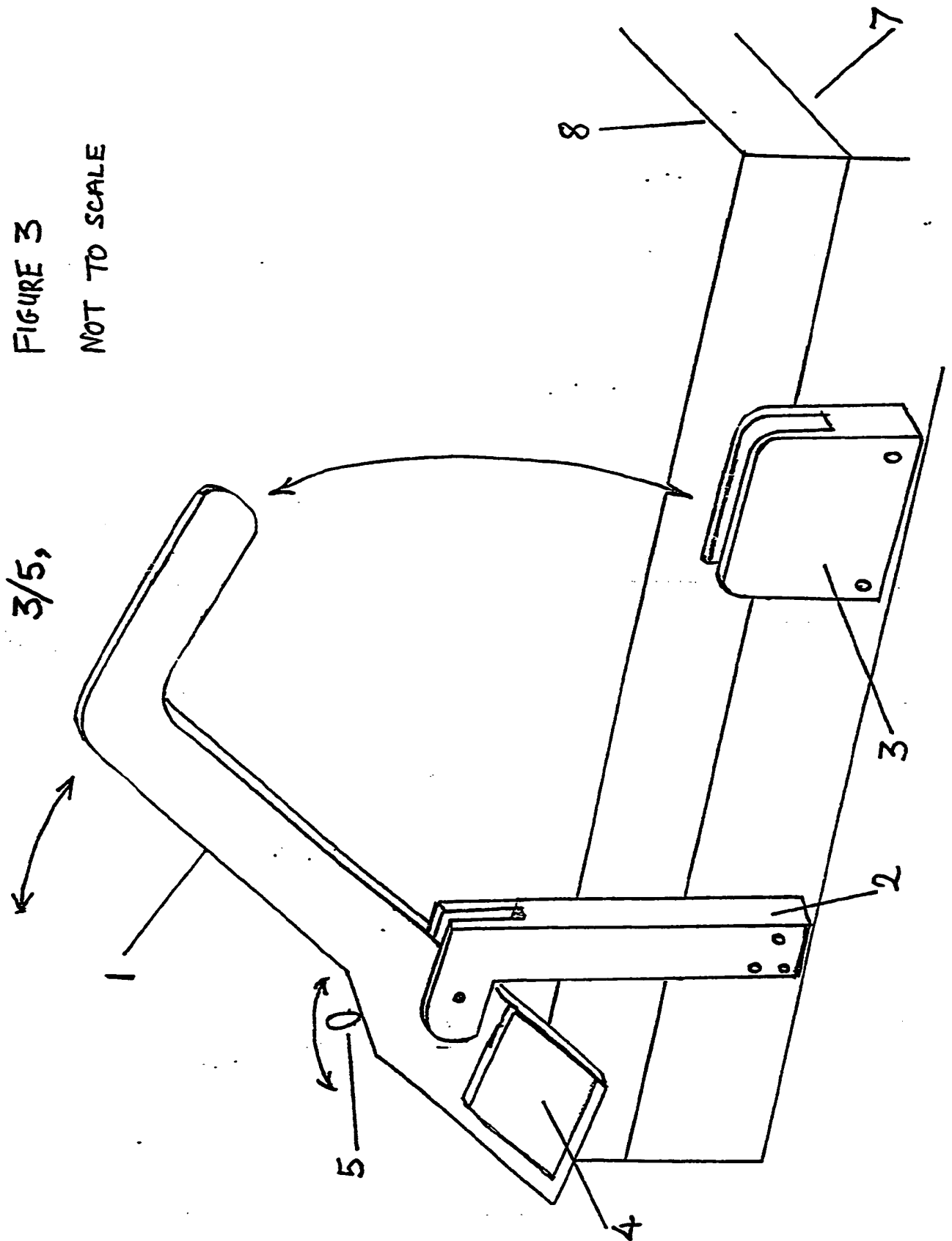


FIGURE 4
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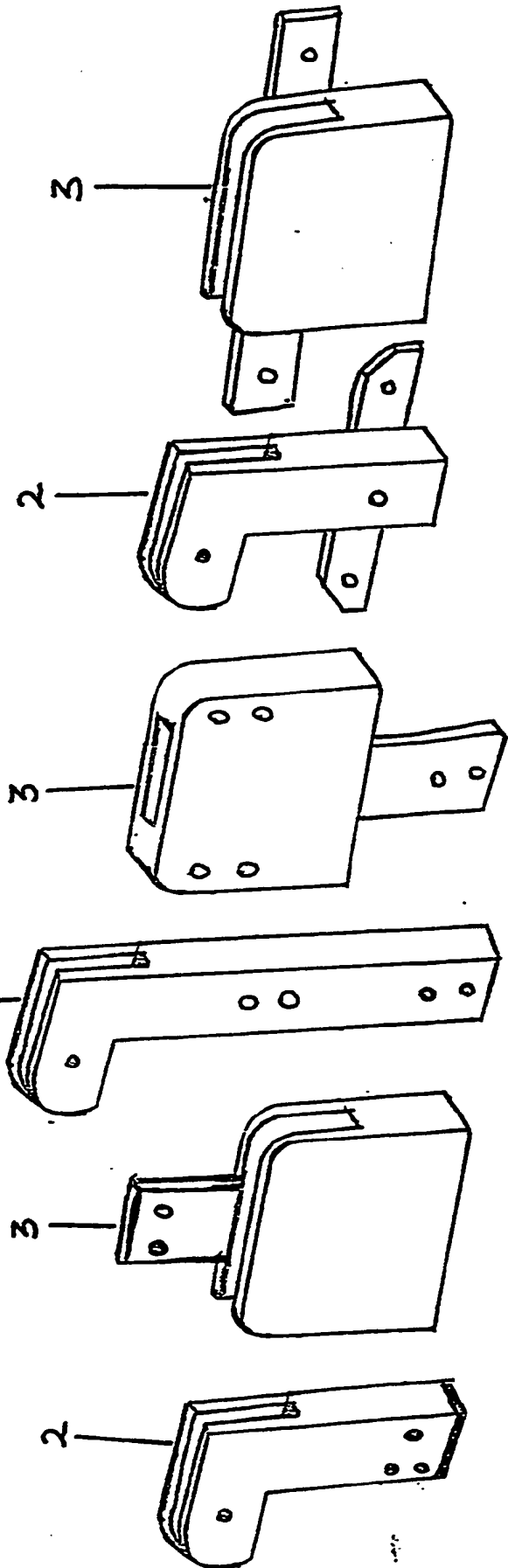
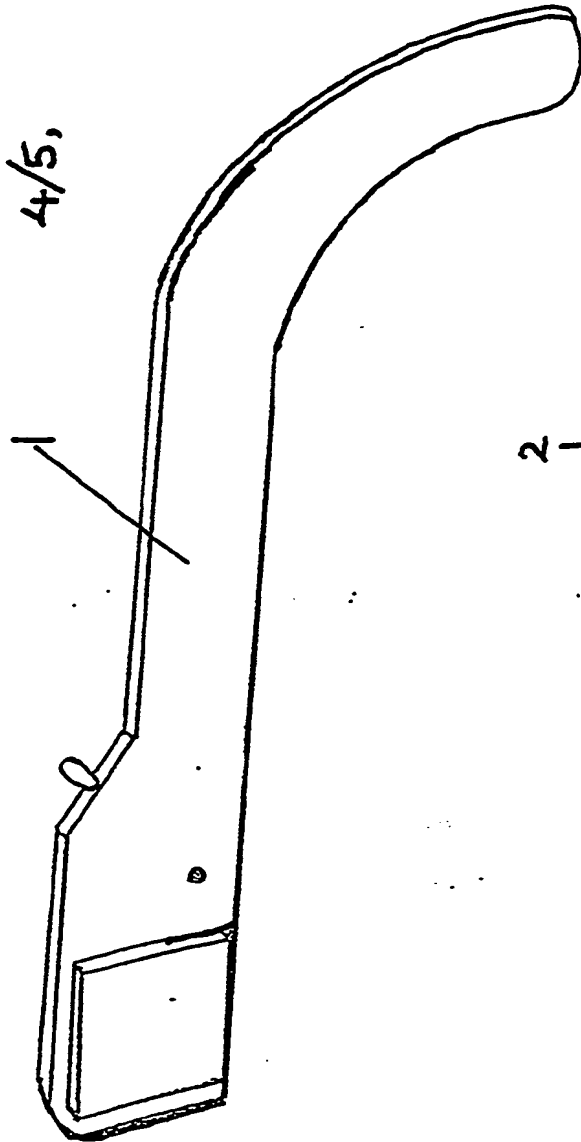
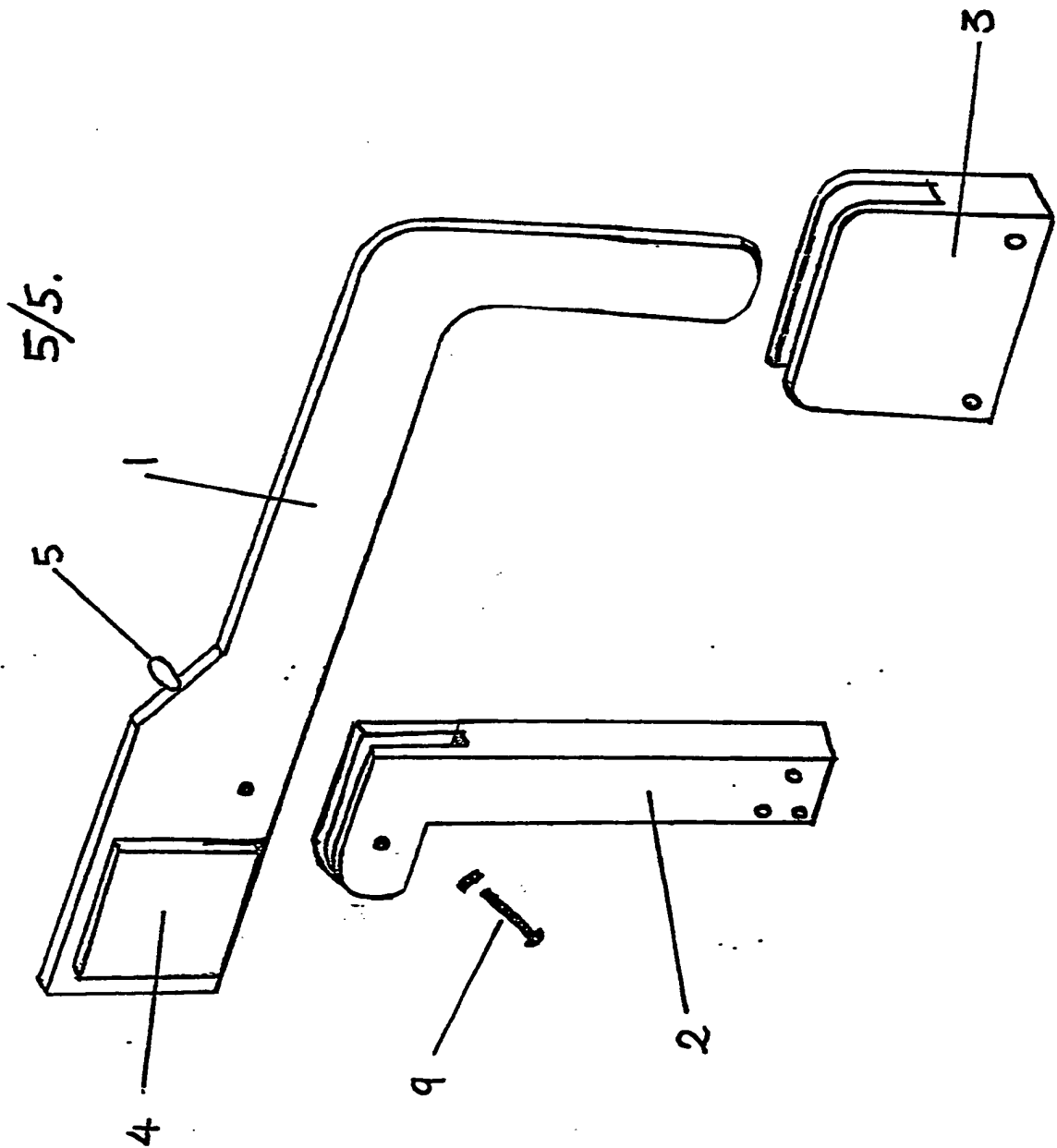


FIGURE 5
NOT TO SCALE



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SAFETY RAIL FOR BEDS

Field of the Invention

The present invention relates to safety rails for beds, being rails which are adapted to reduce the risk of a bed occupant from falling out of the bed.

5 Background to the Invention

Bed safety rails are a common feature of cot designs, the designs of some hospital beds and the design of most bunk beds. In the case of hospital beds and bunk beds the rails are generally unmovable and in the instances where the safety rails are movable, including for hospital beds and the safety rails of
10 cots, the bed occupant generally needs assistance to move the safety rail.

It is a general objective of the present invention to provide a safety rail for a bed which provides the bed occupant with security when sleeping but may be readily moved out of the way of the bed occupant by the bed occupant him/herself when entering or leaving the bed.

15 Summary of the Invention

According to the present invention there is provided a safety rail for beds which comprises an elongate rail member, a support pillar which is fastened, in use, to a bed frame, the safety rail being pivotally mounted, in use, to the support pillar so as to pivot between an operational position in which the
20 safety rail extends substantially horizontally along one side of the bed to obstruct a bed occupant from rolling from the bed and a stowed position in

which the rail extends substantially upwardly to allow a bed occupant or intended occupant to enter or leave the bed, the rail being counterbalanced about its pivotal mounting to the support pillar.

5 The support pillar is preferably an upright pillar and is preferably slotted to provide a clevis through which the safety rail extends, in use.

Advantageously the rail is pivotally mounted to the support pillar at a point off set from the vertical axes of the pillar.

10 Suitably a keep is provided, which is mounted, in use, to the bed frame to which the support is also mounted, to securely hold the leading end of the safety rail in its operational position. The keep is suitably formed having a clevis to enable it to perform its function.

Preferably the rail extends for a distance equivalent to between one half and two thirds of the length of an average bed.

15 By virtue of the counterbalancing of the safety rail about the pivot, it may be readily moved by the bed occupant holding the rail at a point nearer the pivot than would otherwise be the case, thereby enabling the bed occupant to operate the safety rail without having to lean far or move forwardly down the bed. To take advantage of this fact a handle means may be provided on the rail in proximity to the pivotal mounting of the rail to the support pillar.

20 Preferably the rail is formed as an elongate plate which is suitably "L" shaped.

For most practical purposes, where used in a hospital ward or the like, if the bed is not lying alongside a wall the bed safety rails are suitably fitted in pairs to the bed, one on each side thereof.

Brief Description of the Drawings

25 A preferred embodiment of the present invention will now be more particularly described, by way of example, with reference to the

accompanying drawings, wherein:

Figure 1 is an unscaled perspective view of the preferred embodiment of the safety rail in situ, in an operational position mounted to one side of a divan bed;

5 Figure 2 is a more detailed view of the safety rail in a stowed position ;

Figure 3 is a view similar to that shown in Figure 2 but showing the rail in an intermediate position between the stowed position as shown in Figure 2 and the operational position;

Figure 4 is a perspective view of a range of variants of the locking rail; and

10 Figure 5 is a disassembled view of the safety rail illustrated in Figure 1.

Description of the Preferred Embodiment

Referring to Figure 1, the safety rail comprises an elongate safety rail member 1 pivotally mounted by a pivot pin 9 to an upper end of a substantially upright support pillar 2 which is fixed at its lower end to the base of a divan bed 7 by means of dome-headed bolts, screws or other
15 suitable means.

At the upper end of the support pillar 2, the pillar 2 is extended longitudinally of the bed to provide a point of pivotal attachment for the safety rail 1 which is offset from the major, vertical, axis of the support 2. This
20 upper end of the support pillar 2 is formed as a clevis within which the support rail 1 sits and pivots.

The support rail 1 is formed as an "L"-shaped plate, the major portion of which extends from the point of pivotal attachment 9 toward the foot of the bed 7. It is this major portion that serves as the main barrier to the bed
25 occupant falling side ways from the bed 7.

The lesser portion of the safety rail 1 extending from the opposing side of the pivot 9 is provided with a counterweight 4 to counterbalance the weight of the larger, effective barrier portion of the rail 1.

5 A handle 5 is provided on the rail 1 at a position proximate to the pivotal point for ease of access by the bed occupant and enabling the rail to be moved from the operational locking position shown in Figure 1 to the stowed position shown in Figure 2.

10 The counterbalancing of the rail 1 makes it both easy to move with little effort and little movement on the part of the operator and easier for the bed occupant to reach from a comfortable posture.

15 Referring again to Figure 1, when the rail is in its operational state extending longitudinally of the bed and broadly horizontally, the leading end of the rail 1 is captured in a clevis of a keep 3 which is, in turn, secured by bolts 6 or other means, to the base 7 of the bed. The keep 3 reinforces the rail 1 opposing any sideward displacement of the rail 1 laterally of the bed.

20 The configuration of the whole assembly is suitably such that the support pillar 2 holds the rail 1 at a height above the mattress 8 of the bed 7 sufficient to act as an effective barrier against accidental egress of the bed occupant. The height above the mattress will generally be of the order of 1 foot (16-23 cm) and the length of the barrier is suitably of the order of 2-4 feet from its point of pivotal attachment to the support pillar 2.

25 To avoid the need to remove the safety rails when changing bed linen, the pillar 2 and keep 3 may be constructed such that they are distanced from the bed when fixed thereto, by a clearance of the order of a couple of centimetres.

Varieties of pillar 2 and keep 3 to provide such a clearance are illustrated in Figure 4.

5 Although the present invention has been described above with respect to one preferred embodiment numerous alternative embodiments are conceivable. For example, the shape and form of the rail member 1 and of the pillar 2 may be of any suitable type to provide the necessary support and rigidity and provide the easy opening counterbalanced arrangement. The keep 3 is an optional feature whose shape may also be of any suitable form or configuration.

The materials used for the construction of the safety rail assembly should be selected for the required level of robustness.

CLAIMS

- 5 1. A safety rail for beds which comprises an elongate rail member, a support pillar which is fastened, in use, to a bed frame, the safety rail being pivotally mounted, in use, to the support pillar so as to pivot between an operational position in which the safety rail extends substantially horizontally along one side of the bed to obstruct the bed occupant from rolling from the bed and a stowed position in which the rail extends substantially upwardly to allow a bed occupant or intended occupant to enter or leave the bed, the rail being counterbalanced about its pivotal mounting to the support pillar.
- 10 2. A safety rail as Claimed in Claim 1, wherein the support pillar is an upright pillar.
3. A safety rail as Claimed in Claim 2, wherein the pillar is slotted to provide a clevis through which the safety rail extends, in use.
- 15 4. A safety rail as Claimed in Claim 2 or 3, wherein the rail is pivotally mounted to the support pillar at a point offset from the vertical axis of the pillar.
5. A safety rail as Claimed in any preceding Claim, wherein a keep is provided, which is mounted, in use, to the bed frame to which the support is also mounted to securely hold the leading edge of the safety rail in its operational position.
- 20 6. A safety rail as Claimed in Claim 5, wherein the keep is formed having a clevis to enable it to perform its function.
7. A safety rail as Claimed in any preceding Claim, wherein the rail extends for a distance equivalent to between one half and two thirds of the length of a conventional bed.
- 25

8. A safety rail as Claimed in any preceding Claim, wherein a handle is provided on the rail in proximity to the pivotal mounting of the rail to the support pillar.
- 5 9. A safety rail as Claimed in any preceding Claim, wherein the rail is formed as an elongate plate, which is suitably "L" shaped.
10. A safety rail substantially as herein before described with reference to any suitable combination of the accompanying drawings.

6

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields

- (i) UK Cl (Ed.M) A4L (LBES)
(ii) Int Cl (Ed.5) A47C 21/08; A47D 7/00, 7/01, 7/02

Search Examiner
D BUCKLEY

Date of completion of Search
14 JUNE 1994

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

Documents considered relevant following a search in respect of Claims :-
1 TO 10

(ii) ONLINE DATABASES: WPI

Categories of documents

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| Category | Identity of document and relevant passages | Relevant to claim(s) |
|----------|--|----------------------|
| A | GB 1286252 (N.R.D.C) see Figure 1 | |
| A | GB 1204161 (GEORGE ELLISON LTD) see Figure 1 | |

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